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ABSTRACT

This report discusses the administration of two instruments to faculty at 19 schools involved in the Appalachia Educational Laboratory's Quest project, which helps schools with educational reform efforts and challenges norms embedded in traditional school cultures. This study examined several constructs, including teacher efficacy, professional learning community, and organizational efficacy, exploring the characteristics of and interrelationships between Hord's "School Professional Staff as Learning Community" survey and Guskey's "Teaching Questionnaire" survey at the 19 schools. School staff were introduced to the surveys during the "Quest Inquiry into Improvement" conference, then a contact person at each school received survey packets for distribution to faculty members. Completed surveys were returned by March 1998. Of 850 surveys mailed, 624 usable forms were returned. Data analysis indicated that the amount of variation among teachers' views on internal and external efficacy and professional learning communities was fairly consistent both within and across schools. Elementary teachers were more similar than high school teachers in their views regarding professional learning communities. High school teachers felt less efficacious and less part of a professional learning community than did elementary teachers. There was low correlation between professional learning community and teacher efficacy scores. Demographic variables contributed little to the variance of each dependent variable scale score. There were some differences by gender. Results indicate that the scales had adequate reliability. (Contains 11 references.) (SM)

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A Study of Teacher Efficacy and Professional Learning Community in Quest Schools

Kimberly S. Cowley

March 1999

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A STUDY OF TEACHER EFFICACY AND PROFESSIONAL LEARNING COMMUNITY IN QUEST SCHOOLS

March 1999
(Revised Version)

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EXECUTIVE SUMMARY

This report focuses on the administration of two instruments to the faculties of 19 schools involved in the Quest project at the Appalachia Educational Laboratory. This regional applied research project assists schools with educational reform efforts. Quest is an inquiry-based journey of systemic transformation designed to challenge norms embedded in the culture of traditional schools. Quest's goals are to (1) produce a framework and a process that will enable members of school communities to embark on a journey for continuous improvement and (2) create a network of individuals and agencies to sustain and support those school communities in their journey.

As part of their applied research into schools undergoing a journey of continuous school improvement, Quest staff were interested in investigating, in an exploratory manner, several constructs including teacher efficacy, professional learning community, and organizational efficacy. Therefore, staff encouraged Quest school participants to administer Hord's "School Professional Staff as Learning Community" and Guskey's "Teaching Questionnaire" surveys to their faculties.

The goal of this study was to explore the characteristics of and interrelationships between the two instruments for the 19 Quest schools. The objectives were to (1) provide descriptive information for the two instruments, (2) assess the internal reliabilities of the scales for both instruments, (3) determine the level of correlation among the scales of the two instruments, (4) compare and contrast the instrument findings by various groupings, and (5) explore and identify predictive factors and the extent to which they influence respondents' scores on the scales of both instruments.

Staff of the 19 Quest schools were introduced to the two surveys during the Quest Inquiry into Improvement conference in November 1997. These schools consisted of ten elementary and nine high schools in AEL's four-state region (Kentucky, Tennessee, Virginia, and West Virginia). In December 1997, the survey packets were sent via first-class mail to a contact person at each school, who was responsible for distributing the materials to faculty members, collecting the completed surveys from staff, and returning the surveys to AEL. AEL received the completed instruments by March 1998. Thus, AEL was not in charge of the actual administration and collection of the instruments.

A total of 1,040 copies of each survey were mailed, including ten extra copies of each survey per school. Of the 850 surveys (1,040 minus the 190 extra) expected to be completed, 624 instruments were returned in a usable form, for a return rate of approximately 75 percent. Once completed surveys were received at AEL, staff created SPSS databases for each instrument and support staff entered all data. An AEL consultant merged individual school files for each instrument, combined the two separate survey databases into one, and conducted preliminary analyses. AEL staff performed additional analyses that are the foundation for this report. These analyses were all based on three scales (the internal and external teacher efficacy scales and one professional learning community scale), not at the individual item level. Staff generated descriptive statistics for the full group and by various subsets for each of the three scales. In addition, staff generated internal consistency reliabilities and correlations. T-tests and analyses of variance (ANOVA) procedures were run mainly to locate and compare the variance between and within groups since the samples were not drawn at random at the school level. Finally, the last analysis involved multiple linear regression for each of the three scales in an exploratory manner, given the low correlations of the predictor variables to the criterion variables.

Participating schools were first mailed their results from the Hord instrument. Later, individual school summaries of both instruments were prepared for Quest staff to share with participating schools. Each three-page summary consisted of explanatory material about the surveys, school-specific descriptive statistics and correlations for the three scales, and an overall summary of grade-level-specific schools.

Conclusions and recommendations of the study are presented below.

Conclusions

The amount of variation among teachers' views on external and internal efficacy and professional learning communities seems to be fairly consistent both within and across schools. However, elementary teachers seem to be more similar than their high school counterparts in their views regarding professional learning communities.

Based on the Cronbach Alpha reliability estimates, it can be concluded that all three scales have adequate reliability.

The results of this study confirm Guskey and Passaro's (1994) finding that the external and internal scales measure two separate constructs of teacher efficacy; in addition, findings show that as measures in internal efficacy increase, measures in external efficacy tend to decrease and vice versa. Furthermore, internal and external measures of teacher efficacy are not significantly related to perceptions of the school as a learning community. Finally, teachers' years of experience, either total or in the current building, has no bearing on their perceptions of external or internal efficacy nor on their perceptions of their school as a learning community.

This study suggests that high school teachers may tend to feel less efficacious and less part of a professional learning community than do elementary teachers. Furthermore, male teachers may tend to feel less efficacious and less part of a professional learning community than do female teachers. And, male high school teachers may believe that external forces limit their efficacy to a greater extent than do female high school teachers.

This study indicates that categorized years of experience did not greatly impact teacher efficacy or how teachers view their schools as learning communities. And, female elementary teachers seem to be truly different from both male and female high school teachers, but not very different from their male counterparts.

The demographic variables used in this study contributed very little to the variance of each of the dependent variable scale scores. And, of the four variables present in the final regression models (grade level, gender, total years taught/worked at any school, and size of student enrollment), grade level was the most consistent predictor.

Given the above findings of low correlation between professional learning community and teacher efficacy scores, and given the limited explanatory power of the demographic variables, it may be useful to measure an organizational or collective efficacy construct.

Recommendations

Project staff can review the descriptive statistics and use this information as input to further work and collaboration with Quest schools. Staff also may want to share this information with involved schools, as appropriate. And, staff might consider administering the two instruments again toward the end of the project to measure participants' change over time.

Given the acceptable Alpha reliabilities, project staff and others can feel comfortable administering at the school level an instrument based on Guskey's teacher efficacy scales. As well, the scores for the Hord instrument yielded high reliabilities at the school level; therefore, project staff and others can feel comfortable using it as a measure of professional learning community.

One recommendation from this study is for Quest staff and others to continue reporting the results of the Guskey teacher efficacy instrument as two separate scales rather than combining them into one total scale score. Another is that Quest staff and others note the minimal correlation among the three scales and recognize that they measure three very different constructs. And, other researchers could check to see if these low correlations hold up with different groups of schools. Also, since this study showed virtually no correlation between years of experience (total or at current building), Quest staff need not take those variables into consideration when designing or conducting project-related activities for teachers in the involved schools. As well, staff could disregard years of experience as a selection criterion for involvement in the Quest network.

It is recommended that project staff understand how high school males differ from high school females on the external efficacy scale and perhaps plan Quest activities to address this issue. Another recommendation is for others to investigate further this difference appearing between male and female high school teachers on this scale.

Project staff should take gender and grade level differences into consideration when planning future activities with Quest participants; i.e., female elementary teachers differ greatly from both male and female high school teachers and somewhat from their male counterparts. Too, staff may want to share these findings with school faculties, as appropriate, for their own knowledge and possible school planning efforts.

If others are interested in predicting respondents' scores on the three scales utilized in this study, it is recommended that they administer additional measures to gather respondent data related to other constructs—such as self-esteem, self-efficacy, internal/external locus of control, school culture, empowerment, professional development, socioeconomic status, collaboration, or collegiality. By incorporating some of these measures with the Guskey and Hord instruments, it may be possible to identify other constructs that impact on scale score variance. And, others interested in trying to determine which variables explain teachers' scores on these three scales (via multiple linear regression) may want to include the four final model demographic variables used in this study (grade level, student enrollment, gender, and total years taught/worked at any school), but will also certainly want to identify and measure other constructs in the psychological and cognitive domains that might further explain variance.

Researchers interested in this area may want to investigate the construct of organizational or collective efficacy and report their findings to the research community. One method of studying organizational efficacy may be through the use of instruments such as the one developed by Mott (1972), which measures a school's overall effectiveness. A discussion of the construct of organizational or collective efficacy is provided within the recommendations section of this report.

INTRODUCTION

According to Rosenholtz (as cited in Hord, 1997), teachers who feel supported in their own ongoing learning and classroom practice are more committed and effective than those who do not. This support (including teacher networks, cooperation among colleagues, and expanded professional roles) can increase teacher efficacy for meeting students' needs. And, teachers with a strong sense of their own efficacy are more likely to adopt new classroom behaviors and stay in the profession.

Background of Study

This report focuses on the administration of two instruments to the faculties of 19 schools involved in the Quest project at the Appalachia Educational Laboratory (AEL). This regional applied research project assists schools with educational reform efforts. Quest is an inquiry-based journey of systemic transformation designed to challenge norms embedded in the culture of traditional schools (AEL, 1995). The two goals of Quest are to (1) produce a framework and a process that will enable members of school communities to embark on a journey for continuous improvement and (2) create a network of individuals and agencies to sustain and support those school communities in their journey (Meehan, Orletsky, & Sattes, 1997).

As part of their applied research into schools undergoing a journey of continuous school improvement, Quest staff were interested in investigating, in an exploratory manner, several constructs including teacher efficacy, professional learning community, and organizational efficacy. Therefore, staff encouraged Quest schools to administer two instruments—Hord's "School Professional Staff as Learning Community" and an AEL-developed "Teaching Questionnaire" based on Guskey's internal and external teacher efficacy items. The goal of this study was to explore the characteristics of and interrelationships between the two instruments for the Quest schools.

Professional Learning Community

Astuto (in Hord, 1997) defined a "professional community of learners" as a place in which the teachers and administrators of a school continuously seek and share learning, and act on that learning. MacMullen (in Hord, 1997) concluded that the inclusion of the whole faculty is a significant requirement for impact. And, Fuller (in Hord, 1997) emphasized that individuals provide the most effective route for accomplishing systemic change.

According to Hord (1997), the results of a professional learning community for staff include:

- reduction of isolation of teachers;
- increased commitment to the mission and goals of the school and increased vigor in working to strengthen the mission;

- shared responsibility for the total development of students and collective responsibility for students' success;
- powerful learning that defines good teaching and classroom practice, that creates new knowledge and beliefs about teaching and learners;
- increased meaning and understanding of the content that teachers teach and the roles that they play in helping all students achieve expectations;
- higher likelihood that teachers will be well informed, professionally renewed, and inspired to inspire students;
- more satisfaction and higher morale, and lower rates of absenteeism;
- significant advances into making teacher adaptations for students, and changes for learners made more quickly than in traditional schools;
- commitment to making significant and lasting changes; and
- higher likelihood of undertaking fundamental, systemic change (p. 29).

For students, results include:

- decreased dropout rate and fewer classes "cut";
- lower rates of absenteeism;
- increased learning that is distributed more equitably in the smaller high schools;
- larger academic gains in math, science, history, and reading than in traditional schools; and
- smaller achievement gaps between students from different backgrounds (Hord, 1997, p. 30).

The Hord instrument measures five major attributes of a professional learning community, which include:

- the collegial and facilitative participation of the principal who shares leadership—and thus, power and authority—through inviting staff input in decision making;
- a shared vision that is developed from an unswerving commitment on the part of staff to students' learning and that is consistently articulated and referenced for the staff's work;

- collective learning among staff and application of the learning to solutions that address students' needs;
- the visitation and review of each teacher's classroom behavior by peers as a feedback and assistance activity to support individual and community improvement; and
- physical conditions and human capacities that support such an operation (Hord, 1997, pp. 18-19).

Teacher Efficacy

Teacher efficacy is defined by Guskey and Passaro (1994, p. 628) as "teachers' belief or conviction that they can influence how well students learn, even those who may be considered difficult or unmotivated." Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) define it as "the teacher's belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context" (p. 233).

According to Armor (as cited in Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998), the first measure of teacher efficacy included two items grounded in Rotter's social learning theory that were added to a Rand Questionnaire. Gibson and Dembo then created a 30-item teacher efficacy scale, which was later modified in Woolfolk and Hoy's 22-item scale (Guskey, 1998).

Guskey and Passaro (1994) identified an anomaly in the items on the two scales of the Woolfolk and Hoy instrument—personal efficacy items were positive and used the referent "I," while teaching efficacy items were negative and used the referent "teachers." The instrument was revised accordingly (balancing item characteristics) and administered to a sample of 342 teachers. Instead of the dimensions of personal and general teaching efficacy, they found a difference that "was more an internal versus external distinction" (Guskey, 1998). Internal efficacy measures the extent to which teachers believe they can/do have personal influence, power, and impact on students' learning; external efficacy measures teachers' perceptions of the influence, power, and impact of factors outside the classroom and beyond their immediate/direct control.

Guskey (1998) claims that the internal/external classification is not the same as Rotter's "locus of control" measures. Instead of factors representing opposite ends of a bipolar scale, the two factors are distinct and operate fairly independently. Guskey and Passaro (1994) note that due to structure of the scales, the internal factor reflects a positive and optimistic perspective, while the external factor tends to emphasize negative impact.

Objectives of Study

The major goal of this study was to explore the characteristics of and interrelationships between the teacher efficacy and professional learning community instruments for the 19 Quest schools. Thus, this study was seen as both an effort to learn more about the two instruments and to learn of their interrelationships. The objectives of this study were to:

- provide descriptive information for the two instruments,
- assess the internal reliabilities of the scales for both instruments,
- determine the level of correlation among the scales of the two instruments,
- compare and contrast the instrument findings by various groupings, and
- explore and identify predictive factors and the extent to which they influence respondents' scores on the scales of both instruments.

Intended Audience

The primary audience for this report is the Quest project staff. Data analyzed herein may provide staff with new information for their future planning endeavors with involved schools. Secondary audiences may include the instrument developers (Hord and Guskey) and others interested in professional learning community and teacher efficacy issues.

METHODOLOGY

This section presents descriptions of the two instruments used in this exploratory study, the methods utilized in data collection, and the resulting statistical analyses conducted.

Hord Instrument

The "School Professional Staff as Learning Community" survey is a three-page instrument assessing the extent to which teachers believe their school is a positive learning environment and is supportive as a learning community. Originally developed by Shirley Hord, the survey consists of five main descriptors: shared leadership, shared visions, collective creativity, peer review, and supportive conditions/capacities. Each descriptor contains a number of sub-items with individual Likert-type response scales of 5 (high) to 1 (low). These scales have anchor statements at both end-points and at the mid-point to differentiate the high, middle, and low points on the scale. See Appendix A for a copy of the instrument.

The field test of Hord's instrument (Meehan, Orletsky, & Sattes, 1997) determined that it actually measured one overall construct, rather than five distinct constructs. Therefore, the individual items were combined into one total scale, which is how the data are presented in this report. The total scale score indicates the extent to which the teachers believe their school is a positive learning environment and is supportive as a learning community. The higher the number, the more positively the school is viewed as a learning community.

Guskey Instrument

The AEL "Teaching Questionnaire" survey was adapted from Guskey and Passaro's (1994) teacher efficacy items, which measure the extent of internal and external teacher efficacy. Guskey's version of the survey contained 21 items (11 external and 10 internal). In the AEL version, the 11th external item (with the lowest factor loading) was eliminated and a demographic page was added. The three-page survey consists of 20 items (10 external and 10 internal) with corresponding Likert-type response options of Strongly Agree (SA), Mostly Agree (MA), Agree Slightly (A), Disagree Slightly (D), Mostly Disagree (MD), and Strongly Disagree (SD). The demographic page asks respondents for various types of information (respondent's grade taught, role, full or part time, years taught at school, total years experience, education level, gender, age; and school setting, school enrollment, and grade level). See Appendix B for a copy of the instrument.

This instrument measures both internal and external teacher efficacy. Individual items were combined into either of these two scales (depending on their focus), which is how the data are presented in this report. The higher the score in either category, the more the teachers believe that those particular factors influence learning.

Data Collection Methods

Staff of the 19 Quest schools were introduced to the two surveys during the Quest Inquiry into Improvement conference in November 1997. These schools consisted of ten elementary and nine high schools in AEL's four-state region (Kentucky, Tennessee, Virginia, and West Virginia). In December 1997, the survey packets were sent via first-class mail to a contact person at each school, who was responsible for distributing the materials to faculty members, collecting the completed surveys from staff, and returning the surveys to AEL. AEL received all the completed instruments by March 1998. Thus, AEL staff were not in charge of the actual administration and collection of the instruments.

A total of 1,040 copies of each survey were mailed, including ten extra copies of each survey per school. Of the 850 surveys (1,040 minus the 190 extra) expected to be completed, 624 instruments were returned in a usable form, for a return rate of approximately 75 percent. No follow-up contacts were made to nonrespondents and their characteristics are unknown. Essentially, this was a population study, not a random sample.

Once completed surveys were received at AEL, staff created SPSS databases for each instrument and support staff entered all data. An AEL consultant merged individual school files for each instrument, combined the two separate survey databases into one, and conducted preliminary analyses.

Statistical Analyses

AEL staff performed additional analyses that are the foundation for this exploratory report of teacher efficacy and professional learning community in Quest schools. These analyses were all based on three scales (the internal and external teacher efficacy scales and one professional learning community scale), not at the individual item level. Staff generated descriptive statistics for the full group and by various subsets for each of the three scales, as well as internal consistency reliabilities and correlations. In addition to computing correlations of the respondents in various categories (subsets) to the three scale scores, actual years of teaching experience and years in the current school were correlated to the three scales.

As explained above, this was a population study with a 75% response rate. The teachers responding from the individual schools were not drawn at random, but rather volunteered to participate; therefore, it is not possible to determine the characteristics of the nonrespondents. Thus, the main focus of this study was on the descriptive and correlation results. However, part of this study was exploratory in nature regarding teachers' responses to the two instruments. Therefore, it was decided to conduct inferential statistics on the data in order to explore, locate, and compare the variance between and within groups on the three scales. As a result of this decision, t-tests, ANOVAs, and multiple linear regression analyses were conducted. Readers should view these inferential statistics results with this caution in mind.

Participating schools were first mailed their results from the Hord instrument. Later, individual school summaries of both instruments were prepared for Quest staff to share with participating schools. Each three-page summary consisted of explanatory material about the surveys, school-specific descriptive statistics and correlations for the three scales, and an overall summary of grade-level-specific schools. No inferential statistics results were shared with school staff.

FINDINGS

This section presents the findings from administering the Guskey and Hord instruments to Quest school faculties. These findings are presented in both tabular and narrative format at the scale level (External and Internal Guskey and Total Hord); individual item analyses are not reported.

Descriptive Statistics

Table 1 displays the descriptive statistics for the three scales by the full group of respondents, the elementary school group, and the high school group (number, minimum score, maximum score, mean, and standard deviation). For the full group, scale responses ranged from 560 for the Total Hord to 595 for the External Guskey. With a possible range of 10-60 points, the External Guskey scale had a minimum obtained score of 14, while the Internal Guskey was 22. The External Guskey maximum obtained score was 54, while the Internal Guskey was 60. The External Guskey mean was 34.34, with a standard deviation of 7.12; the Internal Guskey mean was higher at 41.92, with a smaller standard deviation of 5.78. With a possible range of 17-85, the Total Hord scale had the minimum obtainable score of 17 and the maximum of 85, with a mean of 59.02 and a standard deviation of 13.11.

For the External Guskey scale, the elementary group had the same minimum score as the full group (14), while the high school's was higher at 19. Both the elementary and high school groups matched the full group's maximum score of 54. The elementary mean was lower than the full group at 31.81 (standard deviation of 7.00), while the high school's was higher at 35.48 (standard deviation of 6.88). For the Internal Guskey scale, the elementary group had a higher minimum score of 31, while the high school equaled the full group (22). The elementary maximum score matched the full group's score of 60, while the high school's was 58. The elementary mean was higher than the full group's at 44.33 (standard deviation of 5.24), while the high school's was slightly lower at 40.85 (standard deviation of 5.69). For the Total Hord scale, the elementary group had a higher minimum obtained score of 28, while the high school group equaled the full group's 17. Both the elementary and high school groups matched the full group's maximum score of 85. And, the elementary mean of 63.87 (standard deviation of 12.53) was higher than the full group's, while the high school mean was lower at 56.77 (standard deviation of 12.88).

Table 2 provides the same descriptive information for the three scales for each of the ten elementary schools. For the External Guskey scale, the number of respondents from each school ranged from 9 to 28. With a possible range of 10-60 points, the lowest minimum score received was 14 (School #6); the highest was 27 (School #7). School #7 received the highest maximum score of 54; the lowest maximum score was 37 (School #4). School #4 had the lowest mean at 29.46 (the only mean in the 20s); School #7 had the highest mean at 35.56. Standard deviations ranged from 5.22 (School #4) to 8.41 (School #7).

Table 1

Descriptive Statistics for the Guskey and Hord Scales by the Full Group, Elementary School Group, and High School Group

Scale	Number	Minimum Score	Maximum Score	Mean	Standard Deviation
Full Group					
External Guskey (10 items; range of 10-60 points)	595	14	54	34.34	7.12
Internal Guskey (10 items; range of 10-60 points)	590	22	60	41.92	5.78
Total Hord (17 items; range of 17-85 points)	560	17	85	59.02	13.11
Elementary School Group					
External Guskey (10 items; range of 10-60 points)	185	14	54	31.81	7.00
Internal Guskey (10 items; range of 10-60 points)	181	31	60	44.33	5.24
Total Hord (17 items; range of 17-85 points)	172	28	85	63.87	12.53
High School Group					
External Guskey (10 items; range of 10-60 points)	410	19	54	35.48	6.88
Internal Guskey (10 items; range of 10-60 points)	409	22	58	40.85	5.69
Total Hord (17 items; range of 17-85 points)	377	17	85	56.77	12.88

Table 2

Descriptive Statistics for the Guskey and Hord Scales by Elementary Schools

School Number	Number	Minimum Score	Maximum Score	Mean	Standard Deviation
External Guskey Scale (range of 10-60 points)					
School #1	19	20	47	33.95	7.80
School #2	14	25	44	33.57	5.53
School #3	26	22	47	31.85	6.44
School #4	13	17	37	29.46	5.22
School #5	28	15	52	30.14	7.30
School #6	24	14	45	31.25	7.31
School #7	9	27	54	35.56	8.41
School #8	14	22	38	30.14	5.52
School #9	25	18	50	33.08	7.72
School #10	13	20	42	30.46	6.97
Internal Guskey Scale (range of 10-60 points)					
School #1	19	35	49	42.53	3.73
School #2	13	35	52	43.08	5.19
School #3	25	37	60	45.16	5.27
School #4	13	35	54	44.54	4.96
School #5	27	39	55	46.74	4.45
School #6	23	35	54	44.26	5.76
School #7	10	36	52	44.10	4.53
School #8	13	31	55	44.15	6.40
School #9	25	33	55	42.68	5.65
School #10	13	34	53	45.08	5.68
Total Hord Scale (range of 17-85 points)					
School #1	18	63	79	72.72	4.74
School #2	12	57	84	71.00	9.34
School #3	25	40	76	56.48	9.82
School #4	13	44	75	58.92	8.74
School #5	25	45	85	71.24	11.30
School #6	22	28	77	62.77	12.41
School #7	10	63	79	72.30	6.38
School #8	14	34	65	49.43	10.57
School #9	22	37	82	65.00	12.18
School #10	11	29	85	58.09	13.95

For the Internal Guskey scale, the number of respondents from each school ranged from 10 to 27. Again with a possible range of 10-60 points, School #8 had the lowest minimum score of 31; School #5 had the highest minimum (39). School #3 received the highest possible maximum score of 60, while School #1 received the lowest maximum score of 49. Means ranged from 42.53 (School #1) to 46.74 (School #5), while standard deviations ranged from 3.73 (School #1) to 6.40 (School #8).

Also shown in Table 2 is the Total Hord scale (possible range of 17-85 points). The number of respondents from each school ranged from 10 to 25. School #6 had the lowest minimum score of 28, while two schools (#1 and #7) tied for the highest minimum of 63. Two schools (#5 and #10) received the maximum obtainable score of 85, while School #8 received the lowest maximum of 65 (the only score in the 60s). There was a large difference of 23.29 between the highest mean of 72.72 (School #1) and the lowest at 49.43 (School #8). Three other schools had means in the 70s, two in the 60s, and three in the 50s. Standard deviations also varied widely, with School #1 at 4.74 and School #10 at 13.95.

Table 3 provides descriptive statistics for the three scales for each of the nine high schools. School #5 was an anomaly in that it had about 100 more respondents than any of the other high schools in the study. For the External Guskey scale, the other eight schools' respondents ranged from 17 to 52. Again with a possible range of 10-60 points, the lowest minimum score was 19 (School #5), while two schools (#4 and #9) tied with the highest minimum of 25. Maximum scores ranged from 37 (School #8) to 54 (School #4). School #8 had the lowest mean of 31.29; School #1 had the highest at 37.62. Standard deviations ranged from 4.18 (School #8) to 7.56 (School #9).

For the Internal Guskey scale, the number of respondents from each school ranged from 15 to 53 (again, School #5 had about 100 more respondents than the other schools). Minimum scores on the 10-60 scale ranged from 22 (School #5) to 36 (School #6); maximum scores were 50 (School #8) to 58 (School #6). School #1 had the lowest mean of 39.20, School #6 had the highest at 43.31. Standard deviations ranged from 4.02 (School #3) to 6.60 (School #1).

School #5 also had about 100 more respondents for the Total Hord scale. The other eight high schools had from 15 to 46 respondents. With a possible range of 17-85 points, School #5 had the lowest minimum score of 17 and School #4 had the highest minimum of 51. The lowest maximum score was 73 (School #2), with two schools (#1 and #7) receiving the highest possible score of 85. These high schoo! means were not as dispersed as the elementary means, ranging only from 54.50 (School #5) to 65.21 (School #6), a 10.71 difference compared to the elementary difference of 23.29. And, the standard deviations were not quite as large either, ranging from 7.93 (School #2) to 13.91 (School #5).

Table 3

Descriptive Statistics for the Guskey and Hord Scales by High Schools

School Number	Number	Minimum Score	Maximum Score	Mean	Standard Deviation
External Guskey Scale (range of 10-60 points)					
School #1	45	20	48	37.62	7.40
School #2	34	21	47	35.26	6.61
School #3	25	23	48	37.24	5.40
School #4	26	25	54	36.92	5.80
School #5	153	19	51	34.99	7.15
School #6	25	21	45	32.96	5.38
School #7	52	21	51	35.15	6.99
School #8	17	24	37	31.29	4.18
School #9	30	25	53	37.37	7.56
Internal Guskey Scale (range of 10-60 points)					
School #1	44	23	54	39.20	6.60
School #2	34	35	55	43.29	5.14
School #3	25	35	51	41.56	4.02
School #4	25	24	53	40.12	5.61
School #5	156	22	54	40.63	5.97
School #6	26	36	58	43.31	5.70
School #7	53	32	56	40.17	5.08
School #8	15	34	50	42.07	4.40
School #9	31	30	55	40.10	5.15
Total Hord Scale (range of 17-85 points)					
School #1	37	24	85	56.68	12.52
School #2	28	42	73	55.14	7.93
School #3	26	29	74	59.92	10.53
School #4	25	51	80	63.76	10.20
School #5	150	17	84	54.50	13.91
School #6	24	37	83	65.21	11.41
School #7	46	31	85	56.85	12.97
School #8	15	40	80	55.27	10.17
School #9	26	33	81	54.77	13.76

Internal Consistency Reliabilities

Table 4 displays the Cronbach Alpha internal consistency reliabilities for the External and Internal Guskey and Total Hord scales for each of the 19 schools. The school number, number of respondents, and reliability scores are presented for each scale. For the External Guskey scale, reliabilities ranged from a low .3044 (High School #8) to .8445 (Elementary School #1). Of the remaining schools, one was in the .40s, three each were in the .50s and .60s, nine were in the .70s, and one more was in the .80s. More than half of the schools (11) scored at least in the .70s. Of the eight below that level, three were elementary and five were high schools.

The Internal Guskey scale reliabilities were not quite as dispersed as the External scores. The lowest was .5240 (High School #3), the highest was .8332 (Elementary School #10); of the remaining schools, three were in the .60s, 11 were in the .70s, and three more were in the .80s. All but four of the schools (two elementary and two high) scored at least in the .70s.

The reliability scores were much higher for the Total Hord scale. Elementary School #1 had the lowest score of .7456, High School #9 had the highest at .9573. Of the other 17 schools, three were in the .80s (two elementary and one high) and the remaining 14 were in the .90s.

Correlations

Table 5 displays the correlations among the External Guskey, Internal Guskey, and Total Hord scales by the full group of respondents and by three demographic variables (gender, grade level, and categorized years of experience).* For the External and Internal Guskey scales, there were eight low negative correlations ranging from -.300 to -.435. These eight correlations included the full group, females, elementary school, and five of the six years of experience categories (all except the 21 to 25 category). The remaining three correlations were very low negative ones: -.242 for males, -.249 for high school, and -.231 for 21 to 25 years. All 11 correlations were significant, but this may be due to the large sizes of the groups. Of more importance is the direction (all negative) and magnitude of these correlations (none above -.435).

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*The "rule of thumb" for interpreting correlation coefficient sizes was taken from *Applied Statistics for the Behavioral Sciences* (Hinkle, Wiersma, & Jurs, 1998) and is included here for the reader's convenience:

.90 to 1.00	(-.90 to -1.00)	Very high positive (negative) correlation
.70 to .90	(-.70 to -.90)	High positive (negative) correlation
.50 to .70	(-.50 to -.70)	Moderate positive (negative) correlation
.30 to .50	(-.30 to -.50)	Low positive (negative) correlation
.00 to .30	(.00 to -.30)	Very low positive (negative) correlation [changed from "Little if any correlation"]

Table 4

Cronbach's Alpha Reliabilities for the Guskey and Hord Scales by Individual Schools

School Number	Guskey External		Guskey Internal		Total Hord	
	N	Alpha	N	Alpha	N	Alpha
Elementary Schools						
Elem. #1	19	.8445	19	.6782	18	.7456
Elem. #2	14	.6123	13	.7760	12	.9387
Elem. #3	26	.7005	25	.7910	25	.9048
Elem. #4	13	.4560	13	.7041	13	.8209
Elem. #5	28	.7955	27	.7312	25	.9510
Elem. #6	24	.7383	23	.7500	22	.9538
Elem. #7	9	.8438	10	.6538	10	.8509
Elem. #8	14	.5170	13	.8139	14	.9243
Elem. #9	25	.7949	25	.7019	22	.9492
Elem. #10	13	.7884	13	.8332	11	.9366
High Schools						
High #1	45	.7719	44	.8025	37	.9248
High #2	34	.6829	34	.7220	28	.8583
High #3	25	.5702	25	.5240	26	.9184
High #4	26	.6428	25	.7734	25	.9242
High #5	156	.7507	156	.7607	150	.9548
High #6	25	.5515	26	.8120	24	.9343
High #7	52	.7878	53	.7486	46	.9427
High #8	17	.3044	15	.6720	15	.9067
High #9	30	.7797	31	.7071	26	.9573

Table 5

Correlations Among the Guskey and Hord Scales
by Full Group, Gender, Grade Level, and Years Experience

Group	Guskey External and Guskey Internal		Guskey Internal and Total Hord		Guskey External and Total Hord	
	N	Corr.	N	Corr.	N	Corr.
Full Group	580	-.319****	530	.050	535	-.015
Gender: Females	401	-.327****	366	.039	370	.026
Gender: Males	174	-.242***	159	.002	160	-.021
Grade Level: Elem.	180	-.323****	166	-.123	169	.165*
Grade Level: High	400	-.249****	364	.017	366	-.001
Years Exp: Up to 5	83	-.300**	76	.082	74	-.088
Years Exp: 6 to 10	88	-.435****	79	-.116	80	.129
Years Exp: 11 to 15	90	-.414****	82	.023	83	-.015
Years Exp: 16 to 20	107	-.308***	100	.102	99	-.053
Years Exp: 21 to 25	81	-.231*	73	.128	75	-.113
Years Exp: 25+	120	-.305***	109	.029	112	.064

*Significant at .05.
**Significant at .01.
***Significant at .001.
****Significant at .0001.

For the Internal Guskey and Total Hord scales, there were nine very low positive correlations and two very low negative correlations (elementary school at -.123 and 6 to 10 years experience at -.116). None of these correlations were significant. For the External Guskey and Total Hord scales, there were seven very low negative correlations, ranging from -.001 to -.113, and four very low positive correlations, ranging from .026 to .165. Only one correlation (elementary school) was significant, at the .05 level, and again, this may be attributed to the group size (180).

Table 5 also shows the vast difference between the correlations of the two Guskey scales (External and Internal), when compared with correlations of each of these with the Total Hord scale. As shown in the first column, all 11 correlations are both negative and significant; the remaining two columns contain far fewer negative correlations, and only one significant correlation at .05.

Finally, the number of years of experience as supplied by respondents was correlated to the three scales, although this is not shown in table format. All three scales had very low correlations to years of experience: the External Guskey was .071, the Internal Guskey was .059, and the Total Hord was -.063. In addition, the number of years in the current school as supplied by respondents was correlated to the three scales. Again, all three scales had very low correlations to number of years in the current school: the External Guskey was .079, the Internal Guskey was .006, and the Total Hord was -.114. Interestingly, the Total Hord scale coefficients were negatively correlated to both the number of years of experience and the number of years in the current school.

Table 6 displays the correlations among the External Guskey, Internal Guskey, and Total Hord scales by the 19 participating schools. For the External and Internal Guskey scales, Elementary School #7 had a high negative correlation of -.776, significant at the .05 level. Elementary School #8 had a moderate negative correlation (-.673), again significant at .05. Six schools (Elementary #1, Elementary #2, Elementary #4, Elementary #9, High #3, and High #7) had low negative correlations, ranging from -.337 to -.474; High School #7 was significant at .01, Elementary #9 at .05. Nine of the remaining schools had very low negative correlations. Of these, High School #5 (at -.285) was significant at .0001, but this may be due to the group size (151). High School #2 was the only school with a positive correlation, albeit a very low .062. And, Elementary School #6 had no correlation.

For the Internal Guskey and Total Hord scales, Elementary Schools #3, #7, #9, and #10 had low negative correlations (-.362, -.343, -.394, and -.396), none of which were significant. Of the remaining 15 schools, six had very low negative correlations and nine had very low positive correlations—again, none were significant. For the External Guskey and Total Hord scales, Elementary School #3 had a moderate positive correlation (.527), significant at .01. Elementary School #6 had a low positive nonsignificant correlation of .402. Of the remaining 17 schools, eight had very low negative correlations and nine had very low positive correlations—none significant.

Overall, Table 6 shows tremendous variation in correlation coefficients among the 19 schools. For example, on the Guskey External and Internal scales, the correlations ranged from -.776 (Elementary #7) to .062 (High #2). For the Guskey Internal and Total Hord scales, the correlations ranged from -.396 (Elementary #10) to .278 (Elementary #5). On the Guskey External and Total Hord scales, they ranged from -.299 (High #1) to .527 (Elementary #3).

Table 6

Correlations Among the Guskey and Hord Scales by Individual Schools

School Number	Guskey External and Guskey Internal		Guskey Internal and Total Hord		Guskey External and Total Hord	
	N	Corr.	N	Corr.	N	Corr.
Elementary Schools						
Elem. #1	19	-.337	18	-.101	18	-.286
Elem. #2	13	-.396	12	.176	12	-.202
Elem. #3	25	-.265	22	-.362	23	.527**
Elem. #4	13	-.474	13	-.216	13	.211
Elem. #5	27	-.156	24	.278	25	.082
Elem. #6	23	.000	21	-.059	22	.402
Elem. #7	9	-.776*	10	-.343	9	-.208
Elem. #8	13	-.673*	13	.039	14	-.138
Elem. #9	25	-.405*	22	-.394	22	.107
Elem. #10	13	-.165	11	-.396	11	-.011
High Schools						
High #1	44	-.228	36	.032	37	-.299
High #2	34	.062	28	.097	28	.040
High #3	24	-.350	24	.116	24	-.152
High #4	25	-.074	24	-.264	25	.203
High #5	151	-.285****	144	.031	145	.075
High #6	25	-.014	24	.062	23	.104
High #7	52	-.363**	45	.074	44	-.201
High #8	15	-.194	13	-.137	15	.009
High #9	30	-.249	26	-.241	25	.092

*Significant at .05.
**Significant at .01.
***Significant at .001.
****Significant at .0001.

Comparisons

Table 7 displays the t-test results for the External Guskey, Internal Guskey, and Total Hord scales by both grade level and gender. For the External Guskey scale, there were 185 elementary and 410 high school respondents, with respective means of 31.81 and 35.48 (possible range of 10-60). The elementary standard deviation was 7.00, while the high school was very close at 6.88. With a t-value of -5.988, the difference between the two groups was significant at .0001. The number of respondents was similar for the Internal Guskey scale, with 181 elementary and 409 high school. The means were 44.33 (elementary) and 40.85 (high school), again with a possible range of 10-60. Standard deviations were 5.24 for elementary and 5.69 for high school. There was a t-value of 7.028, and the between-group difference was significant at .0001. For the Total Hord scale, there were 172 elementary and 377 high school respondents. Out of a range of 17-85, the elementary mean was 63.87 and the high school was 56.77. Standard deviations were very similar, at 12.53 (elementary) and 12.88 (high school). With a t-value of 6.041, the difference between groups was significant at .0001. The relatively high mean for the elementary subgroup on the Total Hord scale may be a function of the larger number of females at this level (see Table 8).

For the gender results, the External Guskey had 410 female and 180 male respondents. The means were 33.35 (female) and 36.72 (male), with standard deviations of 7.00 and 6.89, respectively. With a t-value of -5.407, the difference between the two groups was significant at .0001. The Internal Guskey scale had 405 female and 180 male respondents, with means of 42.41 and 40.77 (standard deviations of 5.69 and 5.87). With a t-value of 3.186, the between-group difference was significant at .01. For the Total Hord scale, there were 379 female and 165 male respondents. The female mean was 59.92, with a standard deviation of 13.34; the male mean was 56.63, with a standard deviation of 12.34. The difference between the groups was significant at .01, with a t-value of 2.707.

Table 8 shows the t-test results for the three scales by grade level and gender combined. At the elementary school level, there were no significant differences between males and females on any of the three scales. For the high school level, only one significant difference was found, at the .0001 level. The External Guskey scale had 240 female and 168 male respondents, with respective means and standard deviations of 34.50 (6.67) and 36.97 (6.93), and a t-value of -3.622.

Table 9 displays the ANOVA results for the External and Internal Guskey and Total Hord scales by both categorized total years of experience and a combination of grade level and gender. These ANOVAs were run mainly to locate and compare the variance between and within groups of respondents; however, these groups were not randomly selected. For the years experience ANOVA, respondents were assembled into six groups (up to 5 years, 6 to 10 years, 11 to 15 years, 16 to 20 years, 21 to 25 years, and more than 25 years); for the grade level and gender ANOVA, respondents were assembled into four groups (elementary females, elementary males, high school females, and high school males). No significant differences in the three scales were found by years of experience. Significant group differences were found for all three scales by the grade level and gender combination. For the External Guskey scale, the elementary school females scored significantly

Table 7

T-Test Results by Grade Level and Gender for the Guskey and Hord Scales

Scale	Level	N	Mean	Std. Dev.	Std. Err. Mean	t-Value	Degrees Freedom	Prob-ability
Grade Level								
External Guskey	Elem.	185	31.81	7.00	.51	-5.988	593	.0001****
	High	410	35.48	6.88	.34			
Internal Guskey	Elem.	181	44.33	5.24	.39	7.028	588	.0001****
	High	409	40.85	5.69	.28			
Total Hord	Elem.	172	63.87	12.53	.96	6.041	547	.0001****
	High	377	56.77	12.88	.66			
Gender								
External Guskey	Female	410	33.35	7.00	.35	-5.407	588	.0001****
	Male	180	36.72	6.89	.51			
Internal Guskey	Female	405	42.41	5.69	.28	3.186	583	.002**
	Male	180	40.77	5.87	.44			
Total Hord	Female	379	59.92	13.34	.69	2.707	542	.007**
	Male	165	56.63	12.34	.96			

*Significant at .05.
**Significant at .01.
***Significant at .001.
****Significant at .0001.

Table 8

T-Test Results by a Combination of Grade Level and Gender for the Guskey and Hord Scales

Scale	Level	N	Mean	Std. Dev.	Std. Err. Mean	t-Value	Degrees Freedom	Prob-ability
Elementary School								
External Guskey	Female	170	31.74	7.15	.55	-.718	180	.473
	Male	12	33.25	5.53	1.60			
Internal Guskey	Female	166	44.41	5.39	.42	.523	176	.602
	Male	12	43.58	3.32	.96			
Total Hord	Female	158	63.92	12.47	.99	.699	167	.486
	Male	11	61.18	13.94	4.20			
High School								
External Guskey	Female	240	34.50	6.67	.43	-3.622	406	.0001****
	Male	168	36.97	6.93	.53			
Internal Guskey	Female	239	41.02	5.49	.35	.788	405	.431
	Male	168	40.57	5.97	.46			
Total Hord	Female	221	57.07	13.24	.89	.567	373	.571
	Male	154	56.31	12.20	.98			

*Significant at .05.
**Significant at .01.
***Significant at .001.
****Significant at .0001.

Table 9

ANOVA Results of the Guskey and Hord Scales by Total Years of Experience and a Combination of Grade Level and Gender

Scale	Degrees of Freedom	F-Ratio	F Probability	Significant Differences by Group
Categorized Total Years of Experience[a]				
External Guskey	5, 577	.834	.526	None
Internal Guskey	5, 573	1.405	.221	None
Total Hord	5, 531	1.547	.174	None
Combination of Grade Level and Gender[b]				
External Guskey	3, 586	16.510	.0001	1 < 3 & 4, 3 < 4
Internal Guskey	3, 581	16.806	.0001	1 > 3 & 4
Total Hord	3, 540	11.936	.0001	1 > 3 & 4

[a]Group 1 = up to 5 years, Group 2 = 6 to 10 years, Group 3 = 11 to 15 years, Group 4 = 16 to 20 years, Group 5 = 21 to 25 years, Group 6 = more than 25 years

[b]Group 1 = elementary school females, Group 2 = elementary school males, Group 3 = high school females, Group 4 = high school males

lower than the high school females and males, and the high school females scored significantly lower than the high school males (F-ratio of 16.510 (3, 586), F probability of .0001). For both the Internal Guskey (F-ratio of 16.806 (3, 581), F probability of .0001) and Total Hord (F-ratio of 11.936 (3, 540), F probability of .0001) scales, the elementary school females scored significantly higher than the high school females and males. (See Table 8 for descriptive statistics for these groups.)

Multiple Linear Regressions

In order to discover which of nine demographic variables possess the most information that is unique and useful in explaining each of the three scale scores (External and Internal Guskey and Total Hord), multiple linear regression (MLR) analyses were conducted. The stepwise model was utilized, whereby one variable at a time was omitted on the basis of its least amount of contribution to the equation. This variable elimination process continued until the regression coefficients of all the remaining variables were significantly different from zero at the .05 level. For each of the three scales, Table 10 presents significant variables (left column), model statistics (middle columns), and coefficient statistics (right columns), followed by a listing of the variables excluded from the final model. The nine demographic variables used in these analyses included grade level; school setting; size of student enrollment; and respondents' gender, age, role in this school, educational level, years taught/worked at this school, and total years experience at any school. Again, the reader is cautioned about the exploratory nature of these MLR analyses, given the low correlations of the predictor variables to the criterion variables (see Table 5).

For the External Guskey scale, the overall multiple correlation for the grade level variable is .269, which increases slightly to .302 with the addition of the gender variable. The coefficient of determination (R-square) in the first model is just .072 and increases only to .091 in the second. Both figures, when adjusted for the 507 degrees of freedom (adjusted R^2), decrease minimally to .071 and .088. Standard errors of estimates are 6.85 and 6.79, and the respective F-ratios of 39.54 and 25.39 are both significant at the .0001 level. The coefficient statistics relate to the second model of the MLR, which explains approximately 10 percent (.088) of the variance for the External Guskey scale score. The t-values are 4.72 for grade level and 3.24 for gender, with significance levels of .0001 and .001 and regression coefficients of .215 and .148, respectively.

For the Internal Guskey scale, the overall multiple correlation for the grade level variable is .272, which increases slightly to .297 with the addition of the total years taught/worked at any school variable. The coefficient of determination (R-square) in the first model is just .074 and increases only to .088 in the second. Both figures, when adjusted for the 501 degrees of freedom (adjusted R^2), decrease slightly to .072 and .084. Standard errors of estimates are 5.65 and 5.61, and the respective F-ratios of 39.87 and 24.17 are both significant at the .0001 level. The coefficient statistics relate to the second MLR model, which explains approximately 10 percent (.084) of the variance for the Internal Guskey scale score. The t-values are -6.66 for grade level and 2.81 for total years taught/worked at any school, with significance levels of .0001 and .005 and regression coefficients of -.286 and .121, respectively.

Table 10

Multiple Linear Regression Results of Nine Demographic Variables and the External Guskey Scale, the Internal Guskey Scale, and the Total Hord Scale

Variables, in Order of Model	Model Statistics							Coefficient Statistics (Final Model)		
	Multiple R	R-Square	Adjusted R^2	Std. Err. of Est.	Deg. of Freedom	F-Ratio	Signif-icance	Student's t	Signif-icance	Beta
External Guskey Scale (N = 509)										
Grade level	.269	.072	.071	6.85	507	39.54	.0001	4.72	.0001	.215
Respondent gender	.302	.091	.088	6.79	507	25.39	.0001	3.24	.001	.148
Variables excluded from the final model: school setting; student enrollment; and respondent's age, educational level, role in this school, years taught/worked in this school, and total years taught/worked at any school.										
Internal Guskey Scale (N = 503)										
Grade level	.272	.074	.072	5.65	501	39.87	.0001	-6.66	.0001	-.286
Total years taught/ worked at any school	.297	.088	.084	5.61	501	24.17	.0001	2.81	.005	.121
Variables excluded from the final model: school setting; student enrollment; and respondent's gender, age, educational level, role in this school, and years taught/worked in this school.										
Total Hord Scale (N = 467)										
Student enrollment	.227	.051	.049	12.83	465	25.24	.0001	-2.92	.004	-.152
Grade level	.261	.068	.064	12.73	465	16.91	.0001	-2.86	.004	-.149
Variables excluded from the final model: school setting and respondent's gender, age, educational level, role in this school, years taught/worked in this school, and total years taught/worked at any school.										

For the Total Hord scale, the overall multiple correlation for the student enrollment variable is .227, which increases slightly to .261 with the addition of the grade level variable. The coefficient of determination (R-square) in the first model is just .051 and increases only to .068 in the second. Both figures, when adjusted for the 465 degrees of freedom (adjusted R^2), decrease slightly to .049 and .064. Standard errors of estimates are 12.83 and 12.73, and the respective F-ratios of 25.24 and 16.91 are both significant at the .0001 level. The coefficient statistics relate to the second MLR model, which explains less than 10 percent (.064) of the variance for the Total Hord scale score. The t-values are -2.92 for student enrollment and -2.86 for grade level, with significance levels of .004 and regression coefficients of -.152 and -.149, respectively.

CONCLUSIONS AND RECOMMENDATIONS

This section provides brief summary findings, each followed by relevant conclusions and recommendations. These are presented in order of the data analyses reported earlier.

This report documents the administration of two instruments to the 19 schools involved in AEL's Quest project. The first is AEL's adaptation of Guskey's teacher efficacy instrument, the "Teaching Questionnaire," which measures internal and external components of teacher efficacy. The second instrument is Hord's "School Professional Staff as Learning Community," which measures the extent to which teachers believe their school is a positive learning environment and is supportive of a learning community.

Summary findings. An inspection of the descriptive statistics shows there was as much score variation within each school as there was among the schools on the three scales. And, for the Internal and External Guskey scales, that variation was about the same for the elementary and high school respondents' scores. However, on the Total Hord scale, the high school teachers did have a wider range of responses than the elementary teachers.

Conclusions. The amount of variation among teachers' views on external and internal efficacy and professional learning communities seems to be fairly consistent both within and across schools. However, elementary teachers seem to be more similar than their high school counterparts in their views regarding professional learning communities.

Recommendations. Project staff can review the descriptive statistics and use this information as input to further work and collaboration with Quest schools. Staff also may want to share this information with involved schools, as appropriate. And, staff might consider administering the two instruments again toward the end of the project to measure participants' change over time.

Cronbach Alpha reliability scores were computed for the External Guskey, Internal Guskey, and Total Hord scales for each of the 19 schools in the study.

Summary findings. The Total Hord scale had the highest reliabilities of the three scales, with one school in the .70s, three in the .80s, and 15 in the .90s. Almost all of the individual schools had acceptable reliability figures for the three scales, with approximately 80% of the scores being in the .70s or above.

Conclusions. Based on the Cronbach Alpha reliability estimates, it can be concluded that all three scales have adequate reliability.

Recommendations. Given the acceptable Alpha reliabilities, project staff and others can feel comfortable administering at the school level an instrument based on Guskey's teacher efficacy scales. As well, the scores for the Hord instrument yielded high reliabilities at the school level; therefore, project staff and others can feel comfortable using it as a measure of professional learning community.

Correlations were generated for the three scales by full group, gender, grade level, and categories of years experience, as well as actual years of experience and years in the current school.

Summary findings. There were low to very low negative correlations between the External Guskey and Internal Guskey scales for the demographic variables, and all were significant. The correlations between both the Internal and External Guskey scales with the Total Hord scale were a mix of very low positive and negative correlations, all of which were nonsignificant except for one very low positive correlation at the elementary level. Individual school data indicate there is only one moderate positive significant correlation between the Hord and Guskey instruments. When correlating actual years of experience and years in the current school to the three scales, the Guskey scale coefficients were all very low positive correlations, while the Hord scale coefficients for both were very low negative correlations.

Conclusions. The results of this study confirm Guskey and Passaro's (1994) finding that the external and internal scales measure two separate constructs of teacher efficacy; in addition, findings show that as measures in internal efficacy increase, measures in external efficacy tend to decrease and vice versa. Furthermore, internal and external measures of teacher efficacy are not significantly related to perceptions of the school as a learning community. Finally, teachers' years of experience, either total or in the current building, has no bearing on their perceptions of external or internal efficacy nor on their perceptions of their school as a learning community.

Recommendations. One recommendation from this study is for Quest staff and others to continue reporting the results of the Guskey teacher efficacy instrument as two separate scales rather than combining them into one total scale score. Another is that Quest staff and others note the minimal correlation among the three scales and recognize that they measure three very different constructs. And, other researchers could check to see if these low correlations hold up with different groups of schools. Also, since this study showed virtually no correlation between years of experience (total or at current building), Quest staff need not take those variables into consideration when designing or conducting project-related activities for teachers in the involved schools. As well, staff could disregard years of experience as a selection criterion for involvement in the Quest network.

T-tests were computed on the three scales by grade level, gender, and a combination of grade level and gender.

Summary findings. High school teachers scored significantly higher than elementary teachers on the External Guskey scale, and significantly lower on the Internal Guskey. As well, high school teachers had a significantly lower score than elementary teachers on the Total Hord scale. Males scored significantly higher than females on the External Guskey, significantly lower on the Internal Guskey, and significantly lower on the Total Hord. When inspecting gender by grade level, there were no significant differences found between males and females for the three scales at the elementary level. But, at the high school level, males scored significantly higher than females on the External Guskey scale.

Conclusions. This study suggests that high school teachers may tend to feel less efficacious and less part of a professional learning community than do elementary teachers. Furthermore, male teachers may tend to feel less efficacious and less part of a professional learning community than do female teachers. And, male high school teachers may believe that external forces limit their efficacy to a greater extent than do female high school teachers.

Recommendations. It is recommended that project staff understand how high school males differ from high school females on the external efficacy scale and perhaps plan Quest activities to address this issue. Another recommendation is for others to investigate further this difference appearing between male and female high school teachers on this scale.

An analysis of variance (ANOVA) was conducted on the three scales by categorized total years of experience and a combination of grade level and gender to compare variances.

Summary findings. There were no significant differences among the six groups for years of experience for the Guskey and Hord scales. When combining grade level and gender, significant differences were found for all three scales. For the External Guskey, high school males scored significantly higher than females at both the high school and elementary level, and high school females scored significantly higher than elementary females. For the Internal Guskey and Total Hord scales, elementary females scored significantly higher than high school males and females.

Conclusions. This study indicates that categorized years of experience did not greatly impact teacher efficacy or how teachers view their schools as learning communities. And, female elementary teachers seem to be truly different from both male and female high school teachers, but not very different from their male counterparts. As well, high school males seem to place more emphasis on external factors impacting their teaching efficacy than do high school females.

Recommendations. Project staff should take gender and grade level differences into consideration when planning future activities with Quest participants; i.e., female elementary teachers differ greatly from both male and female high school teachers and somewhat from their male counterparts. Too, project staff may want to share these findings with school faculties, as appropriate, for their own knowledge and possible school planning efforts.

As part of the exploratory function of this study, nine demographic variables were used in multiple linear regression for each of the three scales.

Summary findings. For each scale, seven of the variables were discarded in the final model. In all three scales, grade level remained in the final model. In addition to grade level, the final regression model for each scale included one additional variable: the External Guskey also included gender, the Internal Guskey also included total years taught/worked at any school, and the Total Hord also included student enrollment. In each scale, the two variables in the final model accounted for less than 10 percent of the variance: .088 for the External Guskey, .084 for the Internal Guskey, and .064 for the Total Hord. However, these results were not unexpected, given the low correlations of the predictor variables to the criterion variables.

Conclusions. The demographic variables used in this study contributed very little to the variance of each of the dependent variable scale scores. And, of the four variables present in the final regression models (grade level, gender, total years taught/worked at any school, and size of student enrollment), grade level was the most consistent predictor.

Recommendations. If others are interested in predicting respondents' scores on the three scales utilized in this study, it is recommended that they administer additional measures to gather respondent data related to other constructs—such as self-esteem, self-efficacy, internal/external locus of control, school culture, empowerment, professional development, socioeconomic status, collaboration, or collegiality. By incorporating some of these measures with the Guskey and Hord instruments, it may be possible to identify other constructs that impact on scale score variance. Others interested in trying to determine which variables explain teachers' scores on these three scales (via multiple linear regression) may want to include the four final model demographic variables used in this study (grade level, student enrollment, gender, and total years taught/worked at any school), but will also certainly want to identify and measure other constructs in the psychological and cognitive domains that might further explain variance.

When reviewing all of the information presented throughout this report, and looking toward future research, an overall summary can be described.

Summary findings. Very low correlations were found in this study among the three scales (External Guskey, Internal Guskey, and Total Hord). And, the nine demographic variables used in this study had minimal explanatory power (less than 10%) in determining scale score variance.

Conclusions. Given the above findings of low correlation between professional learning community and teacher efficacy scores, and given the limited explanatory power of the demographic variables, it may be useful to measure an organizational or collective efficacy construct.

Recommendations. Researchers interested in this area may want to investigate the construct of organizational or collective efficacy and report their findings to the research community. One method of studying organizational efficacy may be through the use of instruments such as the one developed by Mott (1972), which measures a school's overall effectiveness. A discussion of the construct of organizational or collective efficacy follows.

Discussion of Organizational/Collective Efficacy

Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) propose an integrated model of teacher efficacy, which weaves together the two conceptual strands of internal/external and personal/general teaching efficacy and suggests new areas of research. In their model, both analysis of teaching task and assessment of personal teaching competence are separate from, and contribute to, teacher efficacy and the resulting consequences. They note, "By conceptualizing teacher efficacy in terms of the confluence of judgments about personal teaching competence and the teaching task, both competence and contingency . . . are considered in an explanation of resultant teacher efficacy" (p. 233). They claim most existing measures of teacher efficacy do not include both dimensions and that "Studies need to test the relative predictive power of (a) assessments of personal competence and (b) the analysis of the task" (p. 240). And, the authors note the importance of the social context of the school—while self-efficacy has been measured, scant attention has been given to "collective efficacy."

Guskey (1998) points out that, even though significant progress has been made in the area of teacher efficacy, other factors have yet to be identified that may be equally powerful and important. For example, he noted that efficacy can be measured either globally or specifically and by a single student or a group of students, the negative construction of external factor items, and the unknown influence of unidentified organizational variables. Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) likewise note that organizational variables are likely influenced by self and collective efficacy.

In her study of teacher efficacy, Hipp (1996) found results suggesting that "though group purpose may affect staff individually, . . . its strength lies in the impact on the group as a whole—what teachers can do together to succeed" (p. 26). And, her findings implied "that constraints perceived within the power of the principal appeared to have a more negative effect on teacher efficacy than non-school constraints" (p. 27).

Miskel, McDonald, and Bloom (1983) note the common assumption that "organizational effectiveness is a multidimensional concept" and that "virtually every phase, process, or outcome variable can be and has been used as an indicator of effectiveness" (p. 55). According to them, "*Perceived organizational effectiveness* is the subjective evaluation of a school's productivity, adaptability, and flexibility" (p. 55). They found, for instance, that effective schools produce more/better products and services and are more flexible and adaptable than less effective schools. Ultimately, they found that "the structure of schools may appear to be linked loosely to the criteria of organizational effectiveness, but school outcomes may be, and certainly perceptions of effectiveness are, tied to the structure through cultural and social orientations" (p. 77).

Finally, Bandura (1982) claims "The strength of groups, organizations, and even nations lies partly in people's sense of collective efficacy that they can solve their problems and improve their lives through concerted effort. Perceived collective efficacy will influence what people choose to do as a group, how much effort they put into it, and their staying power when group efforts fail to produce results" (p. 143). Bandura also reiterates that knowledge of personal efficacy is related to perceived group efficacy—that "collective efficacy is rooted in self-efficacy" (p. 143). He notes the need for advancing this field of study by developing tools to gauge groups' perceptions of efficacy to achieve results. "Greatest progress will be made in elucidating the development, decline, and restoration of collective efficacy and how it affects group functioning, if measures of perceived group efficacy are tied closely to explicit indices of group performance," he contends (p. 144).

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APPENDICES

Appendix A:

"School Staff as Professional Learning Community" Survey

School Professional Staff as Learning Community*

Directions: This questionnaire concerns your perceptions about your school as a learning organization. There are no right or wrong responses. Please consider where you believe your school is in its development of each of the five numbered descriptors shown in bold-faced type on the left. Each sub-item has a five-point scale. On each scale, circle the number that best represents the degree to which you feel your school has developed.

Last Four Social Security Numbers: __ __ __ __

Date: _____

School: _____

1. **School administrators participate democratically with teachers sharing power, authority, and decision making.**

1a

5	4	3	2	1
Although there are some legal and fiscal decisions required of the principal, school administrators consistently involve the staff in discussing and making decisions about most school issues.		Administrators invite advice and counsel from the staff and then make decisions themselves.		Administrators never share information with the staff nor provide opportunities to be involved in decision making.

1b

5	4	3	2	1
Administrators involve the entire staff.		Administrators involve a small committee, council, or team of staff.		Administrators do not involve any staff.

2. **Shared visions for school improvement have an undeviating focus on student learning and are consistently referenced for the staff's work.**

2a

5	4	3	2	1
Visions for improvement are discussed by the entire staff such that consensus and a shared vision results.		Visions for improvement are not thoroughly explored; some staff agree and others do not.		Visions for improvement held by the staff are widely divergent.

2b

5	4	3	2	1
Visions for improvement are always focused on students and teaching and learning.		Visions for improvement are sometimes focused on students and teaching and learning.		Visions for improvement do not target students and teaching and learning.

2c

5	4	3	2	1
Visions for improvement target high quality learning experiences for all students.		Visions for improvement address quality learning experiences in terms of students' abilities.		Visions for improvement do not include concerns about the quality of learning experiences.

3. Staff's collective learning and application of the learnings (taking action) create high intellectual learning tasks and solutions to address student needs.

3a

5	4	3	2	1
The entire staff meets to discuss issues, share information, and learn with and from each other.		Subgroups of the staff meet to discuss issues, share information, and learn with and from each other.		Individuals discuss issues, share information, and learn with and from each other.

3b

5	4	3	2	1
The staff meets regularly and frequently on substantive student-centered educational issues.		The staff meets occasionally on substantive student-centered educational issues.		The staff never meets to consider substantive educational issues.

3c

5	4	3	2	1
The staff discusses the quality of their teaching and students' learning.		The staff does not often discuss their instructional practices nor its influence on student learning.		The staff basically discusses non-teaching and non-learning issues.

3d

5	4	3	2	1
The staff, based on their learnings, makes and implements plans that address students' needs, more effective teaching, and more successful student learning.		The staff occasionally acts on their learnings and makes and implements plans to improve teaching and learning.		The staff does not act on their learning.

3e

5	4	3	2	1
The staff debriefs and assesses the impact of their actions and makes revisions.		The staff infrequently assesses their actions and seldom makes revisions based on the results.		The staff does not assess their work.

4. Peers review and give feedback based on observing each other's classroom behaviors in order to increase individual and organizational capacity.

4a

5	4	3	2	1
Staff regularly and frequently visit and observe each other's classroom teaching.		Staff occasionally visit and observe each other's teaching.		Staff never visit their peers' classrooms.

4b

5	4	3	2	1
Staff provide feedback to each other about teaching and learning based on their classroom observations.		Staff discuss non-teaching issues after classroom observations.		Staff do not interact after classroom observations.

5. Conditions and capacities support the school's arrangement as a professional learning organization.

5a

5	4	3	2	1
Time is arranged and committed for whole staff interactions.		Time is arranged but frequently the staff fails to meet.		Staff cannot arrange time for interacting.

5b

5	4	3	2	1
The size, structure, and arrangements of the school facilitate staff proximity and interaction.		While the facility and school membership are large, the staff are working to maximize existing arrangements for interaction.		The staff takes no action to manage the facility and personnel for interaction.

5c

5	4	3	2	1
A variety of processes and procedures are used to encourage staff communication.		A single communication exists and is sometimes used to share information.		Communication devices are not given attention.

5d

5	4	3	2	1
Trust and openness characterize all the staff.		Some of the staff are trusting and open.		Trust and openness do not exist among the staff.

5e

5	4	3	2	1
Caring, collaborative, and productive relationships exist among all the staff.		Caring and collaboration are inconsistently demonstrated among the staff.		Staff are isolated and work alone at their task.

*Hord, Shirley M. (1996). Austin, TX: Southwest Educational Development Laboratory.

Appendix B:

"Teaching Questionnaire" Survey

Appalachia Educational Laboratory

TEACHING QUESTIONNAIRE*

School Name: _____

Your Social Security Number is : _____

Directions: This is not a test—there are no right or wrong answers. This questionnaire asks for your opinions about certain aspects regarding teaching. Please read each numbered statement carefully. Then, respond to the statement by circling the letter or letters on the response scale at the right of the statement. The letters or letter correspond to the following responses:

SA–Strongly Agree **MA**–Mostly Agree **A**–Agree Slightly **D**–Disagree Slightly **MD**–Mostly Disagree **SD**–Strongly Disagree

Please do not skip any statements in the list.

1. When a student does better than usual, many times it is because the teacher exerts a little extra effort.	SA	MA	A	D	MD	SD
2. The hours in my class have little influence on students compared to the influence of their home environment.	SA	MA	A	D	MD	SD
3. The amount a student can learn is primarily related to family background.	SA	MA	A	D	MD	SD
4. If students aren't disciplined at home, they aren't likely to accept any discipline.	SA	MA	A	D	MD	SD
5. I have not been trained to deal with many of the learning problems my students have.	SA	MA	A	D	MD	SD
6. When a student is having difficulty with an assignment, I often have trouble adjusting it to his/her level.	SA	MA	A	D	MD	SD
7. When a student gets a better grade then he/ she usually gets, it is usually because I found better ways of teaching that student.	SA	MA	A	D	MD	SD
8. When I really try, I can get through to most difficult students.	SA	MA	A	D	MD	SD

*Source: Guskey, T. R. & Passaro, P. D. (1994. Teacher efficacy: A study of construct dimensions. *American Educational Research Journal, 31*(3), 627-643.

9. I am very limited in what I can achieve because a student's home environment is a large influence on his/her achievement. SA MA A D MD SD

10. Teachers are not a very powerful influence on student achievement when all factors are considered. SA MA A D MD SD

11. When the grades of students improve, it is usually because their teachers found more effective teaching approaches. SA MA A D MD SD

12. If a student masters a new concept quickly, this might be because the teacher knew the necessary steps in teaching that concept. SA MA A D MD SD

13. If parents would do more for their children, teachers could do more. SA MA A D MD SD

14. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson. SA MA A D MD SD

15. The influences of a student's home experi-ences can be overcome by good teaching. SA MA A D MD SD

16. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly. SA MA A D MD SD

17. Even a teacher with good teaching ability may not reach many students. SA MA A D MD SD

18. If a student couldn't do a class assignment, most teachers would be able to accurately assess whether the assignment was at the correct level of difficulty. SA MA A D MD SD

19. If I really try hard, I can get through to even the most difficult or unmotivated students. SA MA A D MD SD

20. When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his/her home environment. SA MA A D MD SD

More

Appalachia Educational Laboratory

Demographic Page

1. What grades(s) do you teach, administer, or supervise?_____

2. What is your role in the school? **(Check only one category)**

____Principal/Asst. Principal	____Counselor/Psychiatrist
____Classroom Teacher	____Teacher's Aide
____Itinerant Teacher (not at bldg. full time)	____Title I Teacher
____School Staff (secretary, custodian, cook)	____Librarian/Media Specialist

____Other (Please explain:_____

_____

3. Do you work at the school full time or part time? (mark only one)
____Full Time ____Part Time

4. Counting this year, how many years have you taught/worked in **any** school? _____years

5. Counting this year, how many years have you taught/worked in **this** school? _____years

6. Check the **one category** that describes how many degrees and credits you have now.

____High School Diploma	____Master's
____Bachelor's	____Master's +15
____Bachelor's +15	____Master's +30 or More
____Bachelor's +30 or more	____Doctor's Degree
____Education Specialist's Degree	____Other (Explain:_____

_____

7. Check one: _____Female _____Male

8. Your age is _____years.

9. Check the **one** category that best describes the setting of your school.
____Urban ____Suburban ____Rural

10. What is the enrollment of your school? _____Students

11. What grades are in your school? (e.g., K-6, 7-9, or 9-12) _____

Appendix C:

Completed Evaluation *Standards* Checklist

Citation Form

The Program Evaluation Standards (1994, Sage) guided the development of this (check one):

____ request for evaluation plan/design/proposal
____ evaluation plan/design/proposal
____ evaluation contract
____ evaluation report
____ other: _____

To interpret the information provided on this form, the reader needs to refer to the full text of the standards as they appear in Joint Committee on Standards for Educational Evaluation, *The Program Evaluation Standards* (1994), Thousand Oaks, CA, Sage.

The *Standards* were consulted and used as indicated in the table below (check as appropriate):

Descriptor		The Standard was deemed applicable and to the extent feasible was taken into account.	The Standard was deemed applicable but could not be taken into account.	The Standard was not deemed applicable.	Exception was taken to the Standard.
U1	Stakeholder Identification	✓			
U2	Evaluator Credibility	✓			
U3	Information Scope and Selection	✓			
U4	Values Identification	✓			
U5	Report Clarity	✓			
U6	Report Timeliness and Dissemination	✓			
U7	Evaluation Impact	✓			
F1	Practical Procedures	✓			
F2	Political Viability			✓	
F3	Cost Effectiveness	✓			
P1	Service Orientation	✓			
P2	Formal Agreements				
P3	Rights of Human Subjects	✓			
P4	Human Interactions	✓			
P5	Complete and Fair Assessment	✓			
P6	Disclosure of Findings	✓			
P7	Conflict of Interest	✓			
P8	Fiscal Responsibility	✓			
A1	Program Documentation	✓			
A2	Context Analysis	✓			
A3	Described Purposes and Procedures	✓			
A4	Defensible Information Sources	✓			
A5	Valid Information	✓			
A6	Reliable Information	✓			
A7	Systematic Information	✓			
A8	Analysis of Quantitative Information	✓			
A9	Analysis of Qualitative Information			✓	
A10	Justified Conclusions	✓			
A11	Impartial Reporting	✓			
A12	Metaevaluation	✓			

Name (typed) Kimberly S Cowley Date: 9/29/98

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